Number Sense Exam 099, 11/16/2020

(1) $13 \times 232 =$ _____

(2) $75 \times .84 =$ _____

(3) $719 + 917 =$ _____

(4) $1616 \div 4 =$ _____

(5) $931 - 139 =$ _____

(6) $\frac{7}{80} =$ _____ % (decimal)

(7) $7002 - 2007 =$ _____

(8) $49 \times 125 =$ _____

(9) $16.24 \div .8 =$ _____

*(10) $213 + 4711 + 18294 - 7 =$ _____

(11) The LCM of 27 and 36 is _____

(12) $20 \div (16 - 12) + 8 \times 4 =$ _____

(13) $\frac{3}{800} =$ _____ % (decimal)

(14) $\frac{3^3}{(2^2)(5^2)} =$ _____ (decimal)

(15) $25 \times 248 =$ _____

(16) Which is larger: $-2\frac{2}{5}$ or -2.35? _____

(17) $2 + 4 + 6 + 8 + \ldots + 22 =$ _____

(18) $(-2)(-4) - (-6) + (-8) =$ _____

(19) $5\frac{1}{3} \div 11\frac{1}{3} =$ _____ (fraction)

*(20) $97531 \div 246 =$ _____

(21) $3\frac{2}{5} \times 3\frac{3}{5} =$ _____ (mixed number)

(22) 4.4 is what percent of 20? _____ %

(23) $1691 \times 9 + 81 =$ _____

(24) How far will a car travel in 1 hour 20 minutes at a constant rate of 90 mph? _____ miles

(25) If $a = 6$, $b = 9$, and $c = -3$, then $bc \div a^2 =$ _____

(26) $1\frac{2}{3} \times 2\frac{3}{4} =$ _____

(27) Find the simple interest on \$1500 at 1.5% for 15 months. \$ _____

(28) $756453 \div 4$ has a remainder of _____

(29) If $A = 3$, $B = 5$, and $C = B$, then $BC + A =$ _____

*(30) 87% of 789 = _____

(31) $0.24666\ldots =$ _____ (proper fraction)

(32) $13 \times 13 \times 13 =$ _____

(33) If $x+(x+3)+(x+6)+(x+9)+\ldots+(x+24) = 144$, then $(x + 12) =$ _____

(34) If $x = 7$ and $y = 2$, then $(x - y)(x^2 + xy + y^2) =$

(35) If $x = 5$ and $y = 3$, then $9x^2 - 6xy + y^2 =$ _____

(36) If $P = -3$, $Q = -2$, and $R = -1$, then $P - Q - R =$ _____

(37) How many positive integers between 4 and 28 are relatively prime to 28? _____

(38) The set $\{F, U, N\}$ has _____ subsets

(39) $14 \times \frac{17}{20} =$ _____

*(40) $\sqrt{122015} =$ _____

(41) The side opposite 60° in a right triangle is $3\sqrt{3}$ units. The length of the other side is _____ units.

(42) $25 + 2.5 + 0.25 + 0.025 =$ _____

(43) $72 \times 1111 =$ _____

(44) Round $\sqrt{8} \times \sqrt{6}$ to a whole number. _____

(45) Let P, Q, and R be the roots of $x^3 - 7x = 6$. Find $(P + Q + R) + PQR$. _____

(46) $101 \times 458 =$ _____

(47) The sum of the x-intercept and y-intercept of $f(x) = 3|x - 4|$ is _____

(48) $22 \times 4! + 32 \times 3! =$ _____

(49) How many lines exist given five coplanar points such that no three are collinear? _____

*(50) $\sqrt{308152015} =$ _____

(51) The vertex of the parabola $x^2 - 6x - 12$ is (h, k) and $k =$ _____

(52) A line perpendicular to $x = -4$ has a slope of ___

(53) If $x^2 + y^2 = 53$, $x > y$ and both x and y are positive integers, then $y =$ _____

(54) $\left(\dfrac{x^2 - 6x + 9}{x - 3}\right)\left(\dfrac{x^2 + 6x + 9}{x^2 - 9}\right) = x +$ _____

(55) Let $\dfrac{7!}{5!} = \dfrac{(x-1)!}{(x-2)!}$. Find x. _____

(56) $(3\mathrm{i} - 2) \div (3\mathrm{i} + 2) = a + b\mathrm{i}$. $b =$ _____

(57) $(4 - \mathrm{i})^2 = a + b\mathrm{i}$, and $a =$ _____

(58) If $(a - 5\mathrm{i})^2 = -16 - 30\mathrm{i}$, then $a =$ _____

(59) $(3 + 2\mathrm{i})(4 + 5\mathrm{i}) = a + b\mathrm{i}$. Find $a + b$. _____

*(60) $8151947 \div 326 =$ _____

(61) $0.3111\ldots$ base $5 =$ _____ base 5 (fraction)

(62) The sum of the positive integers less than 18 and relatively prime to 18 is _____

(63) The period of $y = 2 + 3\sin\left(\dfrac{x}{5}\right)$ is _____ $^\circ$

(64) If the range of $f(x) = a\sin(bx) + c$ is $-3 \le y \le 11$, and $a > 0$, then $a =$ _____

(65) $\cos(\sec^{-1} 2.5) =$ _____

(66) $524_6 + 423_6 + 201_6 =$ _____ $_6$

(67) If $\log_4 8 = y$ then $y^2 - 1.25 =$ _____

(68) If $\dfrac{6!}{4!} = \dfrac{(x-1)!}{x!}$. Find x. _____

(69) If $2\log_4(x - 5) = 3$, then $x > 0$ is _____

*(70) $2^2 + 4^2 + 6^2 + 8^2 + \ldots + 16^2 =$ _____

(71) The dot product of $u = (4, 2)$ and $v = (-1, 3)$ is _____

(72) $\lim\limits_{x \to +\infty} \dfrac{x^2}{1 - x^2} =$ _____

(73) Find the remainder when 232356 base 7 is divided by 7. _____

(74) $\displaystyle\int_2^4 3x\ dx =$ _____

(75) $\sin^{-1}(.6) + \sin^{-1}(.8) =$ _____ (degrees)

(76) $\displaystyle\int_0^1 1 - x^2\ dx =$ _____

(77) $\lim\limits_{x \to 4} \dfrac{\sqrt{x} - 2}{x - 4} =$ _____

(78) If $f(x) = 2 - 3x$, then $f^{-1}(4) =$ _____

(79) If $f(x) = x^5 + x^3 - x$, then $f''(2) =$ _____

*(80) $\sqrt[3]{2222222} =$ _____